February 16, 1965

Dr. Marianne Grunberg-Manago
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13 Rue Pierre Curie
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Dear Marianne:

This letter has been written often, in my head, but as usual time flies. In spite of my silence, the various parcels you sent around Christmas time were received, and enthusiastically. The children love the records, and are acquiring good French pronunciation from them. It's too bad that the American school system will eventually spoil them! All of us have enjoyed the "cookbook" and will probably go on enjoying it for many years. It is really one of the most delightful things I have ever seen! We all thank you for being so very nice.

As you may or may not have heard, the triplet synthesis did go very well indeed. To date, about 20 different triplets have been prepared. Phil Leder and I are working on a manuscript describing the syntheses and the products. A draft will be ready shortly and we'll send it to you.

The triplets as well as various other things have kept us away from the phosphorylase stability problem. Only lately have I gone back to it and started working myself on it--so there is no news on that front. Frank Howard, who had started out to work on it, has instead been studying, using phosphorylase, various properties of a triple helix of 2 poly U and 1 diamino-purine riboside. This helix was discovered by Frank and Todd Miles. The phosphorylase, as well as the potassium activated phosphodiesterase are really very sensitive reagents for the study of secondary structure.

I have agreed to write a chapter on polynucleotide phosphorylase for a new series entitled "Procedures in Nucleic Acid Chemistry," edited by Giulio and David Davies. This is to described preparative methods for the enzyme, not general aspects. I noticed in your recent papers that you have been using Azotobacter enzyme, prepared according to the original procedure (Grunberg-Manago, Ortiz, and Ochoa, 1956) for polymer preparation. Do you have any comments on the procedure, or growth of cells, or designation of the cell strain, that would up date the procedure as described? This would be very helpful in making the article as useful as possible.

For the same reasons, I would be interested in any comments on the E. coli preparation you recently published. In particular, is there any point at which one can stop and have enzyme good enough for polymer preparation, or is it advisable to go all the way through?

Recently we looked, in crude 20,000 x g extracts, at the relative activities of polynucleotide phosphorylase and potassium-activated phosphodiesterase. The diesterase is about 40-50 times more active (for polymer breakdown, than is phosphorylase. Neither one is changed appreciably in 2 mutants that lack the "ribosomal" RNase (A-19 of Gilbert and Watson, and MRE-600 of Wade).

When are you coming for your lectures? Best regards to Armand and the children.

Yours,

Maxine Singer

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